

[[“System for driving columns of a liquid crystal display.”]]

# ABSTRACT

[[\* \* \* \* \*]]

5        A [[The present invention refers to a]] system for driving columns of a liquid  
crystal display includes [[comprising a]] logic circuitry [[(10)]] operating in a supply  
path between a first [[(VDD)]] and a second [[(VSS)]] supply voltage in which the  
first supply voltage is [[(VDD)]] higher than the second supply voltage [[(VSS)]].  
The logic circuitry [[(10)]] is capable of generating [[starting from the]] first logic  
signals [[(LOW\_FRAME, WHITE\_PIX) in input]] and second logic signals [[(CP,

10        CN, CP\_N, CN\_N) in output]] whose value is equal to the first [[(VDD)]] or second  
[[ (VSS) ]], supply voltage. The system includes [[device comprises]] two level shifters  
[[elevator devices (11, 12)]] coupled to the logic circuitry [[(10)]] and operating in a  
supply path between a third supply voltage [[(VLCD)]] greater than the first supply  
voltage [[(VDD)]] and the second supply voltage [[(VSS)]]; the level shifters

15        [[elevator devices (11, 12)]] are capable of raising the value of the second logic  
signals [[(CP, CN, CP\_N, CN\_N)]]]. The system [[device]] also includes  
[[comprises]] a first [[(T11-T12)]] and a second [[(T13-T14)]] pair of transistors  
having [[shaving]] different supply paths [[(VLCD-VA, VB-VSS)]] and having an  
output terminal [[(OUT)]] in common; the first [[(T11-T12)]] and the second [[(T13-

20        T14)]] pair of transistors are coupled [[connected]] to the level shifters [[elevator  
devices (11, 12) so as]] to determine the drive signal of a column. The system  
[[device comprises]] includes turnoff circuitry [[(15)]] operating in a supply path  
between the third [[(VLCD)]] and the second supply voltage [[(VSS)]] and coupled to  
the two level shifters [[elevator devices (11, 12)]]]. The turnoff circuitry [[(15)]] is

25        capable of keeping one of the two pairs of transistors [[(T11-T12, T13-T14)]] in a  
turnoff state in the period of time of a frame when the other of the two pairs of  
transistors [[(T11-T12, T13-T14)]] is [[in]] operative [[conditions. (Fig. 5)]]].

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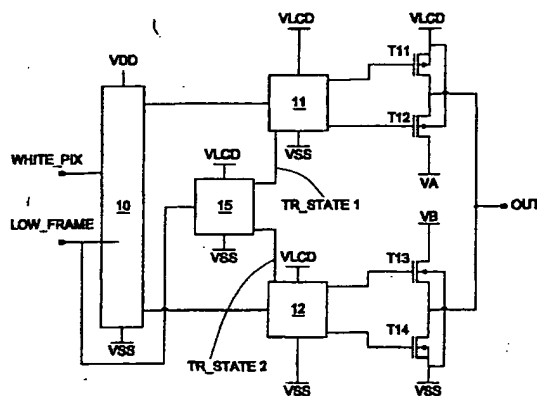
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(54) Title: SYSTEM FOR DRIVING COLUMNS OF A LIQUID CRYSTAL DISPLAY



(57) Abstract: The present invention refers to a system for driving columns of a liquid crystal display comprising a logic circuitry (10) operating in a supply path between a first (VDD) and a second (VSS) supply voltage in which the first supply voltage is (VDD) higher than the second supply voltage (VSS). The logic circuitry (10) is capable of generating starting from the first logic signals (LOW\_FRAME, WHITE\_PIX) in input second logic signals (CP, CN, CP\_N, CN\_N) in output whose value is equal to the first (VDD) or second (VSS) supply voltage. The device comprises two elevator devices (11, 12) coupled to the logic circuitry (10) and operating in a supply path between a third supply voltage (VLCD) greater than the first supply voltage (VDD) and the second supply voltage (VSS); the elevator devices (11, 12) are capable of raising the value of the second logic signals (CP, CN, CP\_N, CN\_N). The device also comprises a first (T11-T12) and a second (T13-T14) pair of transistors shaving different supply paths (VLCD-VA, VB-VSS) and having an output terminal (OUT) in common; the first (T11-T12) and the second (T13-T14) pair of transistors are connected to the elevator devices (11, 12) so as to determine the drive signal of a column. The device comprises turnoff circuitry (15) operating in a supply path between the third (VLCD) and the second supply voltage (VSS) and coupled to the two elevator devices (11, 12). The circuitry (15) is capable of keeping one of the two pairs of transistors (T11-T12, T13-T14) in a turnoff state in the period of time of a frame when the other of the two pairs of transistors (T11-T12, T13-T14) is in operative conditions.

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